The Examiner has indicated that dependent claims 10 and 18 contain allowable subject matter. Applicant has rewritten dependent claim 10 as new independent claim 29 and has rewritten dependent claim 18 as new independent claim 30. It is believed that claims 29 and 30 are in proper form for allowance and such action is earnestly solicited.

The Examiner has rejected claims 1, 13 and 18 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the Examiner is unclear as to what is meant by the phrase "operatively connecting" as used in the claims and how the generator control varies the magnitude and frequency of the AC voltage generated by the generator.

With respect to the Examiner's objection to the phrase "operatively connecting," applicant is somewhat perplexed. Referring to claim 1, a communication link is provided in the control system for operatively connecting the generator control to a network. Since the control system does not incorporate the network to which the communication link connects the generator control. In other words, the phrase "operatively connecting" defines the function of the communications link. As such, the phrase appears to be entirely appropriate to applicant. As such, clarification of the Examiner's objection is respectfully requested.

With respect to operation of the generator control, as fully described in the specification, digital governor 26 is operatively connected to throttle 24 which controls the volume of intake air to engine 22. As is known, digital governor 26 protects engine 22 from over speed conditions and maintains engine 22 at the desired engine speed, which in turn, causes generator 20a to generate a desired electrical power at a desired frequency. Digital governor 26 controls the engine speed of engine 22 by regulating the position of throttle 24, and hence, the amount of fuel and air provided to the combustion chamber of engine 22. As is known, throttle 24 is movable between a wide open position wherein the engine 22 runs at full power and a closed position

wherein engine 22 runs at minimum power. Generator control 42 controls operation of digital governor 26, and hence, throttle 24. (Specification, page 7, lines 6-15)

With respect to the magnitude of the AC output voltage of the generator, such magnitude is monitored by voltage regulator 30. Voltage regulator 30 acts to increase or decrease the excitation of the exciter of the generator to a degree needed to maintain the magnitude of the AC output voltage at the desired value. *Id.* at lines 24-28. Referring to page 9, lines 12-19 of the specification, the generator control is operatively connected to the supply line to monitor the magnitude of the AC voltage provided by the utility. Voltage regulator 30 raises or lowers the AC voltage provided by the generator to precisely match the magnitude of the AC voltage provided by the utility under the control of the generator control. As such, in view of the foregoing, it is believed that the specification fully describes how the generator control varies the magnitude and frequency of the AC voltage generated by the generator. Consequently, withdrawal of the Examiner's rejection under 35 U.S.C. § 112 is respectfully requested.

The Examiner has rejected claims 1 and 13 under 35 U.S.C. § 102(b) as being anticipated by Tamechika, U.S. Patent No. 5,686,766. In addition, claims 2, 7-9, and 19-21 have been rejected under 35 U.S.C. § as being unpatentable over the Tamechika '766 patent in view of Younger et al., U.S. Patent No. 6,160,365, and claims 3-4, 7-12 and 14-15 have also been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Tamechika '766 patent, in view of the Younger et al. '365 patent and further in view of the Schnackenberg et al., U.S. Patent No. 6,172,432. As hereinafter described, it is believed that all of the rejected claims define over the cited references and passage to allowance is respectfully requested.

Claim 1 defines a control system for controlling operation of an engine driven electrical generator. The generator generates AC power having a magnitude and a power factor and an AC voltage having a magnitude and frequency. The generator is connectable to a load such as a utility source that provides AC power having a magnitude and power factor and an AC voltage

having a magnitude and a frequency. The control system includes a generator controller operatively connected to the engine for controlling operation thereof. In adidition, the generator controller is operatively connected to the generator for controlling the AC power generated thereby. A synchronizer is operatively connected to the generator. The synchronizer monitors the magnitude and frequency of the AC voltage of the utility source and a magnitude and frequency of the AC voltage generated by the generator. The generator control adjusts the magnitude of the AC voltage generated by the generator and adjusts the engine speed of the engine so as to vary the frequency of the AC voltage generated by the generator such that the magnitude and frequency of the AC voltage generated by the generator matches the magnitude and frequency of the AC voltage of the utility source. As hereinafter described, nothing in any of the cited references shows or suggests a generator control that varies the engine speed of the engine to vary the frequency of the AC voltage generated by the generator. Such a structure is entirely absent from all of the cited references, and as such, it is believed that independent claim 1 is in proper form for allowance.

The Tamechika '766 patent is directed to an islanding-operation prevention apparatus. The apparatus includes a plurality of dispersed power generation systems that are connected to a utility grid. The power generation system takes the form of a solar power, a wind powered generator, a hydraulic power generator or a fuel cell. The output of the powered generation system is connected to a power conversion means such as an inverter. As is known, an inverter converts direct current into alternating current of a desired magnitude and frequency. Hence, unlike the control system defined in claim 1 wherein the generator control adjusts the magnitude of the AC voltage generated by the generator and adjusts the engine speed of the engine driving the generator in order to vary the frequency of the AC voltage generated by the generator. Hence, the Tamechika '766 patent does not show each and every element of the control system defined in independent claim1, and as such, withdrawal of the Examiner's rejection under 35 U.S.C. § 102(b) is respectfully requested.

Claims 2-4, 7-9 and 11-12 depend either directly or indirectly from independent claim 1 and further define a control system not shown or suggested in the prior art. Referring specifically to claim 2, (rejected under 35 U.S.C. § 103(a) as being unpatentable over the Tamechika '766 patent in view of the Younger et al. '365 patent), it must be noted that the present application is directed to a control system for controlling operation of an engine driven electrical generator, not an interface module for setting the operating parameters of a motor control, such as a soft-starter, which couples an AC induction motor to an AC source, as shown in the '365 patent. It can be appreciated that motor controls and control systems for engine driven electrical generators are pertaining to significantly different arts. It is believed that claims 2-4, 7-9 and 11-12 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Referring to independent claim 13, a generator structure for generating AC power for a load is provided. The generator structure includes a generator connectable to a load and an engine operatively connected to the generator for driving the generator. As heretofore described, the cited Tamechika '766 patent does not show or suggest a generator structure incorporating an engine. For such basis alone, withdrawal of the Examiner's rejection under 35 U.S.C. § 102(b) is respectfully requested. However, in addition, the generator structure also includes a generator control that adjusts the magnitude of the AC voltage generated by the generator and adjusts the engine speed of the engine to vary the frequency of the AC voltage generated by the generator such that the magnitude and frequency of the AC voltage generated by the generator matches the magnitude and frequency of the AC voltage of the utility source. As heretofore described with respect to independent claim 1, none of the cited references show or suggest such a generator control. As such, it is believed that independent claim 13 defines over the cited references and passage to allowance is respectfully requested.

Claims 14-15 and 19-22 depend either directly or indirectly from independent claim 13 and further define a generator structure not shown or suggested in the prior art. It is believed that claims 14-15 and 19-22 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Applicant believes that the present application with claims 1-4, 7-9, 11-15, 19-23 and 27-30 is in proper form for allowance and such action is earnestly solicited. Applicant believes that no fees are necessary at this time. However, the Director is hereby authorized to charge payment of any additional fees associated with this or any other communication or credit any overpayment to Deposit Account No. 50-1170.

Respectfully submitted,

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Dated: 3/10/03

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APPENDIX SHOWING CHANGES IN S.N. 09/882,745

1. (Twice Amended) A control system for controlling operation of an engine-driven, electrical generator which generates AC power and AC voltage having a magnitude and a frequency for a load, the load being operatively connected to a utility source which provides AC power having a magnitude and power factor and AC voltage having a magnitude and a frequency thereto, and the engine having an adjustable engine speed, comprising:

a generator control operatively connected to the engine for controlling operation thereof and operatively connected to the generator for controlling the AC power generated thereby;

a synchronizer operatively connected to a generator control, the synchronizer monitoring the magnitude and frequency of the AC voltage of the utility source and the magnitude and frequency of the AC voltage generated by the generator; and

a communications link for operatively connecting the generator control to a network;

wherein the generator control adjusts [varies] the magnitude [and frequency] of the AC voltage generated by the generator and adjusts the engine speed of the engine to vary the frequency of the AC voltage generated by the generator such that the magnitude and frequency of the AC voltage generated by the generation matches [to match] the magnitude and frequency of the AC voltage of the utility source.

13. (Twice Amended) A generator structure for generating AC power for a load, the load including a utility source which provides AC power having a magnitude and power factor and AC voltage having a magnitude and frequency, comprising:

a generator connectable to the load, the generator generating AC power having a magnitude and a power factor and AC voltage having a magnitude and a frequency;

an engine operatively connected to the generator for driving the generator, the engine having an adjustable engine speed;

a generator control operatively connected to the engine for controlling operation thereof

and operatively connected to the generator for controlling the AC power generated thereby, the generator control including a synchronizer for monitoring the magnitude and frequency of the AC voltage provided by the utility source and the magnitude and frequency of the AC voltage generated by the generator [such that] wherein the generator control [varies] adjusts the magnitude of the AC voltage generated by the generator and adjusts the engine speed of the engine to vary the frequency of the AC voltage generated by the generator such that the magnitude and frequency of the AC voltage generated by the generator [to match] the magnitude and frequency of the AC voltage of the utility source; and

a communications link for operatively connecting the generator control to a network.

Cancel claims 18 and 19.

Please add new claims 29 and 30, as follows:

29. (New) A control system for controlling operation of an engine-driven, electrical generator which generates AC power and AC voltage having a magnitude and a frequency for a load, the load being operatively connected to a utility source which provides AC power having a magnitude and power factor and AC voltage having a magnitude and a frequency thereto, and the engine having an adjustable engine speed, comprising:

a generator control operatively connected to the engine for controlling operation thereof and operatively connected to the generator for controlling the AC power generated thereby, the generator control [includes] including a volt-ampere-reactive (VAR) control for varying the power factor of the AC power generated by the generator to a predetermined value;

a synchronizer operatively connected to a generator control, the synchronizer monitoring the magnitude and frequency of the AC voltage of the utility source and the magnitude and frequency of the AC voltage generated by the generator; and

a communications link for operatively connecting the generator control to a network; wherein the generator control varies the magnitude and frequency of the AC voltage generated by the generator to match the magnitude and frequency of the AC voltage of the utility source.

30. A generator structure for generating AC power for a load, the load including a utility source which provides AC power having a magnitude and power factor and AC voltage having a magnitude and frequency, comprising:

a generator connectable to the load, the generator generating AC power having a magnitude and a power factor and AC voltage having a magnitude and a frequency;

an engine operatively connected to the generator for driving the generator, the engine having an adjustable engine speed;

a generator control operatively connected to the engine for controlling operation thereof and operatively connected to the generator for controlling the AC power generated thereby, the generator control including a volt-ampere-reactive (VAR) control for varying the power factor of the AC power generated by the generator;

the generator control including a synchronizer for monitoring the magnitude and frequency of the AC voltage provided by the utility source and the magnitude and frequency of the AC voltage generated by the generator such that the generator control the magnitude and frequency of the AC voltage generated by the generator [to match] the magnitude and frequency of the AC voltage of the utility source; and

a communications link for operatively connecting the generator control to a network.